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10/054,891	01/25/2002	Naotaka Wachi	Q68255	5436

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SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
WASHINGTON, DC 20037

EXAMINER
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SCHILLING, RICHARD L

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 04/23/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-8

# Office Action Summary

Application No.

10/054891

Applicant(s)

Wachi et al

Examiner

RL Schilling

Group Art Unit

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered time.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 4-4-03
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-32, 34, 36, 38-47 is/are pending in the application.  
Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-6, ~~8~~ 17-32, 34, 36, 38-47 is/are rejected.
- ☒ Claim(s) 7-16 is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
  - ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
  - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit 1752

1. Claims 1-6, 17-32, 34, 36 and 38-<sup>46</sup>~~47~~ are rejected under 35 U.S.C. § 103(a) as being unpatentable over Imamura in view of Kawakami et al. Imamura (see particularly column 7, lines 27-53; column 9, line 49 - column 10, line 30; Example 1) discloses thermal transfer sheets for making color proofs with light to heat conversion layers made as thin as possible to enhance recording sensitivity. The amount of absorbing material disclosed, 1/20-2/1, is the same as disclosed in applicants' specification. The thickness of the light to heat conversion layers is .03-.8 microns, preferably .05-.3 microns, and the absorption of the light to heat materials is preferably .1-1.3. At the preferred maximum absorption in Imamura, the ratio of optical density to layer thickness is .57 or more as required by the instant claims using the disclosed preferred thicknesses of the light absorbing layers in Imamura. The ratio of optical density to layer thickness in Example 1 of Imamura is greater than .57. Polyvinyl butyral is used as the binder in the transfer layers in Example 1 as is used in applicants' working Examples. Therefore, Imamura discloses transfer layers with water contact angles as required by instant claims 40 and 41. Pigment concentration in the transfer layer would inherently provide optical density to thickness ratios greater than 1.5 as required by the instant claims. Alternatively, it would be obvious to one skilled in the art to use colorant concentrations

Art Unit 1752

in the transfer layers of Imamura to increase transfer image density. Also, it would be obvious to one skilled in the art to use thin light to heat conversion layers and increase light absorption materials in the light to heat conversion layers to increase recording sensitivity in the transfer layers of Imamura. Page 24 of applicants' specification discloses that the resolution of the transferred image of 24,000 DPI or more is obtained by using light to heat conversion layers with high optical density to layer thicknesses. Since Imamura has water contact angles the same as disclosed in applicants' specification, high optical density to thickness ratios for the transfer layers and high optical density to thickness ratios for the photoconversion layers, the elements in Imamura et al. would inherently provide transfer images with resolutions of 24,000 DPI or more. Also, the resolution of the instant claims depends upon exposure conditions which are not specified in the instant claims. Imamura does not disclose the image receiving layer size required by the instant claims. However, Kawakami et al. (see particularly column 4, lines 19-30; column 10, lines 4-17; column 13, lines 17-34, column 21, lines 50-55) discloses thermal transfer processes using transfer materials with thin light to heat conversion layers and transfer layers as in Imamura used to make images of large sizes as required by the instant claims. It would be obvious to one skilled in the art, and a matter of

Art Unit 1752

choice to one skilled in the art, to make different size images by the process of Imamura including large size images known in the art as disclosed in Kawakami et al.

11/19/83  
2. Claims 1-6, 17-32, 34, 36 and 38-<sup>46</sup>~~47~~ are rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi or Nakamura et al. both further in view of Kawakami et al. Takahashi et al. (see particularly column 9, lines 1-63; column 10, line 19 - column 11, line 50; Example 1) and Nakamura et al. (see particularly column 7, lines 9-35; column 9, line 57 - column 10, line 65; column 13, lines 7-41; Examples 1 and 2) disclose image transfer elements for making color proofs with light to heat conversion layers made as thin as possible to enhance recording sensitivity. In the working Examples of Takahashi and Nakamura et al. the transfer layers contain polyvinyl butyral binders which would inherently have the water contact angles as required by instant claims 40 and 41. Also, in Example 1 of Takahashi and Examples 1 and 2 of Nakamura et al., the light to heat conversion layers contain the same infrared absorbing dyes used in applicants' working Examples, have a thickness of .3 microns and an absorption of 1 thereby providing an optical density to layer thickness ratio greater than .57 as required by the instant claims. Also, the concentrations of absorbing material in the light to heat conversion layers of Takahashi and Nakamura et al. are the same as the concentrations

disclosed in applicants' specification and the light to heat conversion layer thicknesses in Takahashi et al. and Nakamura et al. are preferably .05 to .3 microns. It would at least be obvious to one skilled in the art to use preferred concentrations of absorbing material and preferred thicknesses in the light to heat conversion layers of Takahashi and Nakamura et al. to provide light to heat conversion layers that are as thin as possible with high melt concentrations of absorbing materials at the preferred disclosed ranges which would provide ratios of optical density to layer thicknesses of .57 or more. It would also be obvious to one skilled in the art to increase colorant concentrations in the transfer layers to increase transfer image density if Takahashi and Nakamura et al. do not inherently have the optical density thickness ratios greater than 1.5 for the transfer layers as required by the instant claims. Page 24 of applicants' specification discloses that the high ratios of optical density to layer thicknesses for light to heat conversion layers as required by the instant claims provide transfer elements capable of providing resolutions of 24,000 DPI or more. Since Takahashi et al. and Nakamura disclose transfer elements with light to heat conversion layers with high optical density to thickness ratios as required by the instant claims and transfer layer binders the same as used in applicants' specification, the elements in Takahashi and Nakamura et al. would inherently be

Art Unit 1752

capable of providing resolutions of 24,000 DPI or more as required by the instant claims. Also, the resolutions depend upon exposure conditions which are not set forth in the instant claims. Takahashi et al. and Nakamura et al. do not disclose making images with sizes as required by instant claims 1-32, 34, 36 and 38-42. However, Kawakami et al. (see particularly column 4, lines 19-30; column 10, lines 4-17; column 21, lines 50-55; column 11, lines 51-56) discloses making transfer images with large size images required by the instant claims using laser transfer processes with transfer elements containing light to heat conversion layers made thin for high sensitivity and transfer layers similar to the transfer donor elements used in Takahashi et al. and Nakamura et al. Therefore, it would be obvious to one skilled in the art to use the materials and processes of Takahashi and Nakamura et al. to make large size images as known in the art as disclosed in Kawakami et al. The size of the image made would be a matter of choice to one skilled in the art.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) The invention was described in (1) an application for patent, published under Section 122(b), by another filed in the United States before the invention by the

Art Unit 1752

applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 43-46 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wachi et al. '504. The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. § 102(e). This rejection under 35 U.S.C. § 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Wachi et al. (see particularly column 3, lines 41-60; column 7, lines 38-45; column 11, lines 1-21; column 12, lines 17-60; column 13, lines 23-51; column 14, lines 15-65; column 18, lines 26-54; Examples 1-5) disclose heat transfer materials and methods for making color proofs wherein the ratio of reflection density to pigmented transfer layer thickness in the working Examples is over 2.5. The image transfer layers and image receiving layers used in the working Examples of Wachi et al.



Art Unit 1752

contain the same polyvinyl butyral binders as used in the working Examples in applicants' specification and therefore would inherently have the same contact angles in relation to water as set forth in instant claims 40 and 41. The photo thermal conversion layers in Wachi et al. have preferred optical densities of .1-1.3 and thicknesses of .03-.8 which would include the optical density to thickness ratio set forth in the instant claims. Using the particularly preferred thickness of the light to heat conversion layers of Wachi et al. of .05 to .3 microns with the disclosed optical densities of the light to heat conversion layers of the working Examples, i.e. 1.08, would provide optical density to thickness ratios greater than .57 as required by the instant claims.

4. (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 43-46 are rejected under 35 U.S.C. § 102(a) as being anticipated by Japanese Publications 2001/310941 or 2001/328287. The Japanese publications are the foreign equivalents to the U.S. patent to Wachi et al. and are publications resulting from the publication of the foreign priority applications of Wachi et al. For purposes of this rejection, Wachi et al. is considered to be a translation of the Japanese publications. Wachi et al. and the instant application are to common assignees. The common assignee is requested to

Art Unit 1752

state whether or not the U.S. patent to Wachi et al. is essentially a translation of the Japanese publications. The Japanese publications anticipate the instant claims for the reasons set forth above as to why the U.S. patent to Wachi et al. anticipates the instant claims.

5. Claims 1-32, 34, 36 and 38-47 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wachi et al. '504 or the combination of Japanese publications 2001/310941 and 2001/328287 all further in view of Kawakami et al. As stated above, the U.S. patent to Wachi et al. is considered to be a translation of the Japanese publications. The U.S. patent to Wachi et al. may be removed as a reference available under 35 U.S.C. § 103 if applicants state that Wachi et al. and the instant application were subject to common assignment at the time the invention was made. Wachi et al. (see particularly column 3, lines 41-60; column 7, lines 38-45; column 11, lines 1-21; column 12, lines 17-60; column 13, lines 23-51; column 14, lines 15-65; column 18, lines 26-54; Examples 1-5) and the Japanese publications disclose heat transfer materials and methods for making color proofs wherein the ratio of reflection density to pigmented transfer layer thicknesses in the working Examples is over 2.5 as required by the instant claims. The image transfer layers and image receiving layers used in the working Examples of Wachi et al. and the Japanese publications contain the same

polyvinyl butyral binders as used in the working Examples in applicants' specification and therefore would inherently have the same contact angles in relation to water as set forth in instant claims 40 and 41. The photo thermal conversion layers in Wachi et al. and the Japanese publications have preferred optical densities of .1-1.3 and thicknesses of .03-.8, most preferably .05 to .3 microns, which would include the optical density to thickness ratios required by the instant claims. The requirement for resolutions of 24,000 DPI or more when the elements of the instant claims are used in a process is inherent in the elements of Wachi et al. and the Japanese publications. Page 24 of applicants' specification discloses that light to heat conversion layers with high optical density to thickness ratios provide transfer elements capable of forming resolutions of 24,000 DPI or more. Since the elements of Wachi et al. and the Japanese publication have light to heat conversion layers with the optical density to thickness ratios required by the instant claims and also have transfer layers as required by the instant claims, the elements of Wachi et al. and the Japanese publications are inherently capable of providing transferred images with resolutions of 24,000 DPI or more. Also, resolution depends upon exposure conditions which are not specified in the instant claims. Wachi et al. and the Japanese publications do not specify image receiving layer sheet sizes as required by instant

Art Unit 1752

claim 1. However, Kawakami et al. (see particularly column 4, lines 19-30; column 10, lines 4-17; column 11, lines 51-56; column 13, lines 17-34; column 21, lines 50-55) discloses laser transfer processes using transfer donor elements with light to heat conversion layers having thicknesses and optical densities similar to those of Wachi et al. and the Japanese publications wherein the images formed have large sizes as required by the instant claims. Therefore, it would be obvious to one skilled in the art to use the elements and processes of Wachi et al. and the Japanese publications to form large size images as known in the art as disclosed in Kawakami et al. depending upon the size of the image desired.

6. Claims 43-46 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Imamura for the same reasons as set forth in item No. 1 of the first Office action filed December 4, 2002.

7. Claims 43-46 are rejected under 35 U.S.C. 102(a) and (e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takahashi or Nakamura et al. for the same reasons as set forth in paragraph No. 2 of the first Office action. Instant claims 43-46 do not set forth image layer sizes or particular resolutions. Claims 43-46 have not been amended.

Art Unit 1752

8. Claim 38 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. The term "OD/layer thickness" in claim 38 lacks clear antecedent singular basis since parent claim 1 has two layers with defined optical density to layer thicknesses.

9. Applicants' arguments filed April 4, 2003 have been fully considered but they are not deemed to be persuasive. Applicants' argument that Imamura, Takahashi and Nakamura do not disclose the resolution of the recorded image is unconvincing since the elements of the applied prior art would inherently be capable of providing high resolution images are required by the instant claims. Also, claims 43-46 do not set forth a resolution requirement. Imamura, Takahashi and Nakamura do not disclose matting agents in the light to heat conversion layers as required by claim 47 as argued by applicants. However, Wachi et al. (column 9, lines 49-65) does disclose the use of matting agents in light to heat conversion layers.

10. Claims 7-16 are objected to as depending on a rejected claim but would be allowable if written in proper independent form.

11. Japanese Publication 2000/355177 is cited of interest in the art as being the Japanese equivalent to the U.S. patent to

Serial No. 10/054,891

-13-

Art Unit 1752

Takahashi. The prior art submitted by applicants has been considered.

12. Any inquiry concerning this communication should be directed to Mr. Schilling at telephone number (703) 308-4403.

RLSchilling:cdc

April 17, 2003

RICHARD L. SCHILLING  
PRIMARY EXAMINER  
GROUP 1100 1752

